

REMARKS AND ARGUMENTS

Claims 1- 20 remain in the application. Independent Claim 1 is newly amended. Claim 20 is newly presented herein.

Claim 1 has been amended to indicate more clearly that the first, second, third, and fourth through-apertures (32, 34, 36, 26) and first and second non-through apertures (28, 30) are for the purpose of receiving tubular members. This is supported throughout the specification, e.g. at paragraphs [0012], [0013], [0019], [0037], and by FIGS. 5A, 5B, 5C, 5D,5J, as well as FIGS. 6A, 6B, 6C, 6D.....6J, FIGS. 7A-7E, 8A- 8G, 9, 9A, 9B, and 10.

Rejections Under 35 U.S.C. § 103

1. Claims 1-9 and 11-15 stand rejected under 35 U.S.C. §103(a) as being obvious over DE3232590A1 (Melang) in view of Chapman 4,294,561.

The German patent (Melang) shows a wooden construction block formed of layers of wood which are pressure-glued to form a block with numerous square through-holes 4 in the X, Y, and Z axes. The square through-holes 4 result in a lighter block. The Melang block of FIG. 5 is about 30 percent lighter than an equivalent block without square through-holes 4. It does not appear that holes 4 are used for accepting square structural members at all, as are larger holes 10. Instead, holes 4 are present to lighten the block, although a concomitant result is a significant loss of strength.

The Chapman et al. reference shows a connector for joining one tubular member in each of the X, Y and Z axes. Thus, its use in forming structures of any but the simplest sort is very limited.

In Chapman et al., a screw lock 5 is provided for simultaneously locking all three tubular members simultaneously. The aperture 4 for immediate tubular member 13 or17 is positioned adjacent the other two apertures 6, 8 and enlarged so turning of lock screw 5 will press tubular member 13, 17 against the other tubular members to lock them all in place. This makes it very difficult to erect a structure, inasmuch it is necessary to hold all three tubular members 11, 12

and 13, plus a collar 20, at desired positions in the connector while screwing the lock screw. Any movement in any of the tubular members will make a crooked structure. The hole in which the locking screw 5 is driven is not another aperture for insertion of a tubular structural member, but is simply for locking the elongate members in place..

Neither Melang nor Chapman et al. show an aperture for supporting structural members at any but at right angles with each other. This is a critical factor inasmuch as e.g. a roof cannot be attached without using additional connectors. Also, angular cross-braces cannot be accommodated in Melang's or Chapman's structures at all!

The particular arrangement of the connector block of the invention and apertures on the block is very important to achieve the advantages of the invention, that is:

- a. The ability to produce a structure having structural members in 3 normal directions (X, Y, Z) to each other and one member at a non-normal angle with the other structural members, where "normal" refers to an angle of 90 degrees;
- b. The ability to achieve such a structure with a minimum number of connector blocks;
- c. The ability to achieve such a structure using readily available inexpensive tubular materials;
- d. The ability to individually lock each tubular member at a desired position within each connector block.
- e. The ability to avoid slippage of tubular members in the connector block during assembly and avoid sudden collapse during disassembly.
- f. The ability to form a structure having three parallel structural members connected to a connector block;
- g. The ability to form a structure with simple assembly that may be easily disassembled and reused.
- h. The ability to achieve structural integrity and longevity in an inexpensive structure;
- i. The ability to achieve a lightweight structure.
- j. A structural system by which a person with average mechanical ability can easily form a variety of desired structures.
- k. The ability to achieve all of the above at a very low cost.

The applicant has found that a connector block which he created comprises the optimal

way to achieve these objects. The connector block is particularly claimed in Claim 1 and shown in FIGS. 1-4. The applicant worked for years to find a connector block configuration which would optimally meet all of the above requirements.

To remake the Melang connector block into an equivalent of Claim 1 of the invention would require changing the following:

- a. removing one through-hole 10 from each of two of the three pairs of holes;
- b. changing one of the single through-holes of (a) to a non-through hole;
- c. adding a third parallel through-hole 10 on the side with two through-holes for receiving a structural member;
- d. adding a non-through hole 10 at a non-right angle to the other through-holes 10; and
- e. removing holes 4 from the structure.

None of these changes are obvious, nor is there any suggestion in the Melang or Chapman et al references that any of the changes may or should be made to produce the connector block of Claim 1. Applicant believes that in view of these presentations, Claim 1 is patentable as amended.

With regard to Claim 2, the small parallel apertures of Melang are NOT meant for containing structural members such as beams, but are merely to save weight and wood. They cannot be cited as equivalents of the apertures for receiving tubular members of the present invention.

In regards to Claim 3, Chapman does disclose the use of structural members with round cross-section. However, the combination of Claim 3 with independent Claim 1 is not reached by combining Melang and Chapman et al.

In regards to Claims 4 and 6, the disclosure of Melang may be interpreted to indicate the positions of the first and second through-apertures of Claim 4. If this is done, however, then the Examiner is forced to use a non-parallel aperture of Melang as one of the three parallel apertures of the invention. The Melang aperture cannot be both parallel and non-parallel with the other two apertures. Therefore, use of Melang to show Claim 6 is inherently inconsistent. Furthermore, applicant believes that Claims 4 and 6 are patentable as being dependent on Claim 1, now believed to be fully allowable.

Regarding Claims 5 and 7, applicant maintains that these claims are allowable as being dependent on Claim 1, believed to be patentable as amended.

Regarding Claims 8 and 9, applicant acknowledges that various types of materials used to construct the connector block are disclosed in the art. Claims 8 and 9 are deemed allowable as dependent on Claim 1.

It is noted that newly presented Claim 20 claims the use of a high density polyethylene material formed by re-processing recycled beverage containers. This HDPE material is described in the application, paragraph [0045] and is the preferred material for construction of the connector block of the invention.

In regard to Claims 14 and 15, the lock of Chapman is designed to clamp one tubular member against the other two tubular members, using a collar actuated by a screw. A person must hold all three tubular members, the connector block , and the collar in their respective positions while screwing the lock-screw. There is no way to lock individual tubular members into the connector block as they are individually inserted, or unlock one member at a time during dis-assembly. In Claim 15, four pilot holes for insertion of lock screws permits individual locking of various tubular members.

Regarding Claim 16, the Examiner's argument relates to the length of Chapman's screw which is inserted to lock a tubular member in place. However, in the present invention, there is NO screw on the truncated side. Instead, the aperture on the truncated side is for insertion of a supportive tubular member at a non-normal intermediate angle. The truncation has no effect on the length of the tubular member.

Regarding Claims 17, 18, and 19, applicant deems them patentable as being dependent on Claim 1, considered allowable by applicant.

2. Claim 10 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Melang and Chapman as applied to claim a, and further in view of Finlayson U.S. 6,145,226.

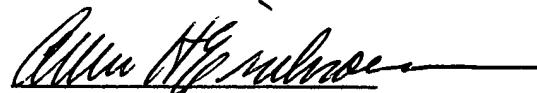
Applicant notes that the Finlayson patent discloses an eartag for an animal, in which the tag is made from a UV resistant material, such as a black plastic. While applicant acknowledges that such protection of plastic materials has been known and used for years, its use in combination with other unique features of the present invention as presented in claim 1 is new

and not obvious. Claim 10 is believed to be patentable as being dependent upon claim 1 which applicant deems to be allowable.

None of the other art cited by the Examiner is believed to be any closer to the present invention than the art cited in the rejections.

In view of the above amendments and representations, applicant believes that Claims 1-20 of the instant invention are fully patentable over the prior art. Applicant respectfully requests a timely Notice of Allowance.

Respectfully submitted,



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